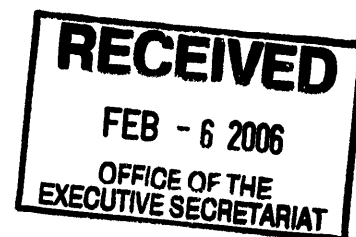




January 27, 2006



Steve Johnson, Administrator  
Environmental Protection Agency  
Ariel Rios Building  
1200 Pennsylvania Avenue, N.W.  
Washington, DC 20460

RE: Petition to add Phosphate Rock Mining to the list of facilities required to report releases of chemicals under Standard Industrial Classification Code 1475

Dear Administrator Johnson:

In reference to section 313 (b) (1) (B) of the Emergency Planning and Community Right to Know Act (EPCRA) 42 U.S.C. 11023 (b) (1) (B) and provided for in sections 553 (e) and 555 (e) of the Administrative Procedure Act, the Greater Yellowstone Coalition hereby requests the Environmental Protection Agency to promulgate a rule that would add Standard Industrial Code (SIC) 1475, also known as 212392 under the North American Industrial Classification System (NAICS), Phosphate Rock Mining to the list of facilities required to report releases of toxic chemicals listed in the Toxic Release Inventory. Enclosed with this correspondence is our petition to the EPA to promulgate such a rule. We also ask that the EPA publish this petition in the Federal Register so that it may become part of the public record.

The Greater Yellowstone Coalition is a 501 (c) (3) non-profit conservation organization with 13,000 members that is devoted to the conservation and health of the Greater Yellowstone Ecosystem. The Greater Yellowstone Ecosystem encompasses eighteen million acres including Yellowstone and Grand Teton National Parks, six national forests, three national wildlife refuges, and approximately three million acres of private lands.

Phosphate mining has been responsible for the release of large quantities of selenium (Se) in Idaho annually. These releases of Se have had a deleterious effect on the environment resulting in selenosis deaths of livestock and high bioaccumulations in fish and other wildlife, prompting the Idaho Department of Health and Welfare to issue a fish consumption advisory and conduct several health consults based on selenium releases to the environment.<sup>1</sup> While the issue of selenium contamination has been ongoing locally for over decades, many people who live, work, and recreate in the region remain unaware of the danger those releases pose. Therefore the inclusion

162 North Woodruff  
Idaho Falls, Idaho 83401  
ph (208) 522-7927  
fax (208) 522-1048

E-mail:  
gyc@greateryellowstone.org  
On the web:  
www.greateryellowstone.org

<sup>1</sup> Idaho Department of Health and Welfare, 2002. Health Consultation, Selenium in Fish Streams of the Upper Blackfoot River Watershed.



of phosphate mining in SIC code 1475 is needed and fulfills the intent of EPCRA in Toxic Release Reporting.

The Greater Yellowstone Coalition is confident that after your review you too will agree that Phosphate Rock Mining operations should be required to report releases of selenium to the environment.

Sincerely,

A handwritten signature in cursive script, appearing to read "Marv Hoyt".

Marv Hoyt  
Idaho Director

Enclosure

**Petition to add Phosphate Rock Mining to the list of facilities required to report releases of chemicals under Standard Industrial Classification Code 1475, or North American Industrial Classification System 212392**

**Submitted by the Greater Yellowstone Coalition**

**Introduction**

The purpose of EPCRA is to provide the public with information concerning hazardous chemicals that may affect them in their environment and to allow them to make more informed decisions. EPCRA also has the effect of motivating industries to become better neighbors through chemical use reductions and mitigation measures. Under EPCRA section 313 (b) (1) (B), the EPA Administrator may add an industry group to the list of those already required to report releases of toxic chemicals under the Toxic Release Inventory (TRI) if the industry meets established criteria of the section. Those criteria are:

- (1) chemical toxicity and impact to the surrounding environment,
- (2) meeting chemical activity and use thresholds, and
- (3) value of information to the public.

As will be illustrated and documented in this petition, the inclusion of phosphate mining, SIC code 1475 facilities, and requiring them to report TRI releases meets the statutory requirements and intent of EPCRA.

**1. Chemical toxicity and impact to the surrounding environment**

Quoting section 313 (b) (1) (B), the Administrator may include a new industry group if "such action is warranted on the basis of toxicity of the toxic chemical, proximity to other facilities that release the toxic chemical or to population centers, the history of releases of such chemical at such facility, or other such other factors as [deemed] appropriate."

Nearly half of the U.S. phosphate reserves lie in a central area where the states of Montana, Wyoming, Utah, and Idaho are conjoined. Within these phosphate rock bearing formations (Phosphoria), Se occurs naturally and is highest in the Meade Peak Member of the Phosphoria formation.<sup>1</sup> Se, a listed section 313 toxic chemical, is present as relatively insoluble forms within the formation and is transformed into the soluble forms of selenite and selenate when exposed to weathering and oxidation as in open pit mining processes. These mobile forms of Se occur from weathered mining wastes and are transported into the environment through water runoff and infiltration of water.<sup>2</sup> In

---

<sup>1</sup> McKelvey, V.E., Strobell, J.D., and Slaughter, A.L. 1986. The Vanadiferous Zone of the Phosphoria Formation in western Wyoming and southeastern Idaho. US Geol. Surv., Prof. Paper, 1465.

<sup>2</sup> Desborough, G., E. De Witt, J. Jones, A. Meier, and G. Meeker. 1999. Preliminary Mineralogical and Chemical Studies Related to the Potential Mobility of Selenium and Associated Elements in Phosphoria Formation Strata, Southeastern Idaho. USGS Open File Report 99-120

the process of open pit phosphate mining, the mined materials expand by as much as 30%, and as such, waste rock must, at times, be disposed of in external piles or waste dumps.<sup>3</sup> Seeps discharging selenium from these piles are known to occur widely throughout the phosphate production area in southeast Idaho.<sup>4</sup>

The Blackfoot and Salt River watersheds currently have the highest density of phosphate mining use in Idaho with eleven mines located within twenty-one miles of each other with a total surface area disturbance of almost twenty square miles.<sup>5</sup> Of these eleven mines, four are currently active, though leasing areas and areas for expansion are under review.<sup>6</sup> Continued mining in the region on such a concentrated basis can only ensure that the Se problem will continue to increase as a human and ecological hazard in southeast Idaho. Increasing public awareness, through TRI reporting is warranted.

Se is an essential micronutrient but becomes toxic with elevated exposure in embryonic development, as biochemical pathways are unable to distinguish Se from sulfur. This has the effect of creating congenital defects, which have been noted in the embryos of fish<sup>7</sup> and waterfowl eggs in the area of phosphate mines that exhibited Se concentrations eight times the allowable amount for viability.<sup>8</sup> Se has an equally onerous toxic effect in that it bio-accumulates in the food chain, which impairs growth and affects reproductive and immune capacities of animals.<sup>9</sup>

Case studies on the impacts of Se on fish reproduction are well documented. Two such cases are Belews Lake in North Carolina and Martin Reservoir, Texas, both of which were contaminated by Se laden ash wastewater from coal fired electric generating facilities. Belews Lake was contaminated over a period of nine years and of the twenty species of fish originally there, only two remained after the nine-year contamination period (1974-1985). The fish in Belews Lake were extirpated due to reproductive failure. Because of the bioaccumulative nature of Se, contaminated lake sediments at the base of the food chain were still causing developmental abnormalities in the re-stocked young fish as of 1996.<sup>10</sup> It is important to note that this ecological disaster resulted from flows

---

<sup>3</sup> Verbal communication Bill Stout, Bureau of Land Management. 25 Oct. 2005. Pocatello, Idaho.

<sup>4</sup> Smokey Canyon Mine, Panels B & C Final Supplemental Environmental Impact Statement. April, 2002.

<sup>5</sup> Presser, T.S., Piper, D.Z., Bird K.J., Skorupa, J.P., Hamilton, S.J., Detwiler, S.J., and Huebner, M.A. Selenium Loading Through the Blackfoot River Watershed: Linking Sources to Ecosystems. *Life Cycle of the Phosphoria Formation: From Deposition to Post-Mining Environment* pg. 439. Edited by James R. Hein. 2004.

<sup>6</sup> US Department of Interior, Bureau of Land Management.

<sup>7</sup> Cumbie, P.M. and Van Horn, S.L. 1978. Selenium accumulation associated with fish mortality and reproductive failure.

<sup>8</sup> Presser, T.S., Piper, D.Z., Bird, K.J., Skorupa, S.J., Hamilton, S.J., Detwiler, S.J., Huebner, M.A. The Phosphoria Formation: A Model for Forecasting Global Selenium Sources to the Environment., *Life Cycle of the Phosphoria Formation: From Deposition to the Post-Mining Environment*. Pg. 312. Edited by James R. Hein. 2004.

<sup>9</sup> Hill, Sheryl. Aquatic Systems Biologist. Pocatello, Idaho. An Analysis of Selenium Concentrations in Water and Biological Tissue Samples Collected in the Upper Blackfoot River and Salt River Watersheds from 1997 to 2003., 2005.

<sup>10</sup> Lemly, Dennis. Selenium Impacts on Fish: An Insidious Time Bomb. Human and Ecological Risk Assessment: Vol. 5, No. 6, pp. 1139-1151 (1999)

of Se laden water having concentrations of 150 -200 Se  $\mu\text{g/L}$ , which is far less than the concentrations of Se in streams in the vicinity of the phosphate mines. Pole Creek that drains part of the Smoky Canyon Mine had Se levels that averaged 2,350  $\mu\text{g/L}$  Se. Maybe Creek, which drains the South Maybe Canyon Mine, has had Se levels as high as 1,140  $\mu\text{g/L}$  Se.<sup>11</sup> East Mill Creek, which drains the North Maybe Canyon Mine, had samples, which measured 417  $\mu\text{g/L}$  Se in the spring of 2005.<sup>12</sup>

Recent sampling indicates that there is already contamination of fish, aquatic plants, and aquatic insects throughout the phosphate-mining region.<sup>13</sup> These large amounts of Se released to the environment by phosphate mining operations pose significant risks to the aquatic ecosystems of the Blackfoot River in Idaho and the upper Salt River in Wyoming. Between 1997 and 2003 thirty-one separate streams and rivers were sampled for Se in the Blackfoot and Salt River drainages in the phosphate-mining field. Samples included; water, sediment, aquatic plants, invertebrates, and fish. All of the streams but three exhibited a high percentage of samples in each of the above mediums that exceeded the "levels of concern" published by the U.S. Department of Interior in 1998.<sup>14</sup> In 2005 seven of those streams were re-sampled. Three fish were collected from each stream totaling twenty-one samples. Of those twenty-one fish, seventeen exceeded the proposed EPA standard maximum of 7.91  $\mu\text{g/g}$  Se dry weight criterion to protect aquatic life.<sup>15</sup> Recent aquatic invertebrate sampling reviewed by a representative of the U.S. Fish and Wildlife Service prompted the following statement, "we managed to discover aquatic invertebrates with the highest level of selenium (788 ppm) ever reported from much more intensive and extensive sampling across the western U.S."<sup>16</sup> One could presume a similar "Belews Lake" catastrophe is ongoing in southeast Idaho and the upper Salt River drainage in Wyoming.

The environmental damage is not limited to aquatic ecosystems. On at least five occasions since 1996, livestock deaths have been attributed to selenosis in the vicinity of phosphate mines in southeastern Idaho. Six horses in 1996 and another two in 1997 were afflicted following exposure to relatively low concentrations of selenium over an extended period. Six of the eight were euthanized.<sup>17</sup> In September 1999, approximately

---

<sup>11</sup> Hill, Sheryl. Aquatic Systems Biologist. Pocatello, Idaho. An Analysis of Selenium Concentrations in Water and Biological Tissue Samples Collected in the Upper Blackfoot River and Salt River Watersheds from 1997 to 2003., 2005.

<sup>12</sup> Weber, Frank. Research Triangle Institute, Research Triangle Park, NC. Technical Report. RTI Project No.:08973.002.009, May 19, 2005.

<sup>13</sup> Weber, Frank. Research Triangle Institute, Research Triangle Park, NC. Technical Report. RTI Project No.:08973.002.009, Sep. 19, 2005.

<sup>14</sup> U.S. Department of the Interior. 1998. Guidelines for interpretation of the biological effects of selected constituents in biota, water, and sediment. National Irrigation Water Quality Program Information Report No. 3, U.S. Department of Interior, Washington, D.C. Levels of concern are defined as follows: "...rarely produce discernable adverse effects but are elevated above typical background concentrations" whereas concentrations above these levels "...appear to produce adverse effects on some fish and wildlife."

<sup>15</sup> Weber, Frank. Research Triangle Institute, Research Triangle Park, NC. Technical Report. RTI Project No.:08973.002.009, Sep. 19, 2005.

<sup>16</sup> Joe Skorupa, USFWS, in e-mail to Sheryl Hill, 9 June 2003.

<sup>17</sup> Montgomery Watson. 1998. Fall 1997 interim surface water survey report, Southeast Idaho Phosphate Resource Area Selenium Project. Prepared for the Idaho Mining Association Selenium Committee.

60 sheep died from selenium contaminated forage or water near the Stauffer mine.<sup>18</sup> Again in June 2001, approximately 160 sheep died from selenium-contaminated water downstream from the Conda mine.<sup>19</sup> Yet another 327 sheep died in May 2003 after they had been grazing on a reclaimed overburden dump site near the Conda mine.<sup>20</sup> Many of the sheep deaths resulted from acute toxicity of selenium and death occurred within a very short period of time, often within 72 hours of exposure as all of the reclaimed waste piles had concentrations of Se in the vegetation that far exceeded the 5mg/kg grazing recommendations.<sup>21</sup>

As one study illustrates, thresholds for acute and chronic poisoning for grazing animals occurred "at numerous disturbed [reclaimed] sites" in the vicinity of the phosphate mines.<sup>22</sup> At all of the sampled locations, Se concentrations in the vegetation were quite elevated above background levels. Pertinent to grazing, the mean tissue samples for legumes were 80mg/kg and grasses 18 mg/kg.<sup>23</sup> There also exist "hot spots" having concentrations as high as 200 mg/kg, which would likely result in acute poisoning in just one day of grazing for cattle, sheep and other wildlife.<sup>24</sup> While some of these greater risk areas are no longer open for grazing,<sup>25</sup> high levels of Se continue to pervade local forage and water and are responsible for elevated selenium concentrations in local cattle. In fact, even 150 days after removal from the range, levels were documented at 1.3mg/kg indicating, "sheep or cattle directly off of pasture to slaughter could present a hazard [for consumption]."<sup>26</sup>

Additionally there exists a potential hazard from consuming local wildlife as well. In 2000, the Idaho Dept. of Fish and Game took muscle and liver samples of harvested elk at game check stations. The elk taken within two miles of mine sites exhibited muscle tissue Se concentrations as high as .92 mg/kg and liver tissue at 13 mg/kg. Consumption of such "contaminated elk liver could [result] in adverse health effects like nausea."<sup>27</sup> Lower elevation wetlands that receive the drainage from disturbed mine locations produce vegetation having more than 53 mg/kg Se.<sup>28</sup> This no doubt has had an adverse effect on wetland foragers such as moose or waterfowl when one considers that

---

<sup>18</sup> Idaho State Journal. 12 Nov., 1999. Pocatello, Idaho.

<sup>19</sup> Idaho State Journal, 6 Jun., 2001. Pocatello, Idaho.

<sup>20</sup> Caribou County Sun, 19 Jun., 2003. Soda Springs, Idaho.

<sup>21</sup> Idaho Department of Environmental Quality.

<sup>22</sup> Mackowiak, C.L., Amacher, M.C., Hall, J.O., and Herring, J.R. Uptake of Selenium and other contaminant elements into plants and implications for Grazing Animals in Southeast Idaho., *Life Cycle of the Phosphoria Formation: From Deposition to the Post-Mining Environment*. Pg. 546. Edited by James R. Hein. 2004.

<sup>23</sup> Ibid. pg. 527

<sup>24</sup> Ibid. pg. 548.

<sup>25</sup> Idaho Department of Environmental Quality. Area Wide Human Health and Ecological Risk Assessment and Related Memorandum. Rick Clegg. 2002.

<sup>26</sup> Idaho Department of Health and Welfare. Health Consultation. Evaluation of Se in Beef, Elk, Sheep, and Fish. 27 June, 2001.

<sup>27</sup> Ibid.

<sup>28</sup> Mackowiak, C.L., Amacher, M.C., Hall, J.O., and Herring, J.R. Uptake of Selenium and other contaminant elements into plants and implications for Grazing Animals in Southeast Idaho., *Life Cycle of the Phosphoria Formation: From Deposition to the Post-Mining Environment*. Pg. 527. Edited by James R. Hein. 2004.

symptoms of Se toxicosis occurs in livestock consuming vegetation containing  $\geq 3\text{-}5\mu\text{g/g}$  Se.<sup>29</sup> It is not as simple to restrict wildlife, as it is domesticated livestock from grazing and watering in highly contaminated areas, so information regarding Se would benefit those consuming wild game.

Consumption of excessive amounts of Se in humans causes various adverse health effects depending upon exposure. Acute symptoms of selenosis (ingestion of very large quantities over a short period of time) include nausea, vomiting, diarrhea, and cardiovascular problems.<sup>30</sup> Chronic symptoms (ingestion of smaller quantities of longer periods) include hair/nail loss and neurological problems.<sup>31</sup> The Agency for Toxic Substances and Disease Registry has established the chronic intake level at .005 mg/kg/day of Se.<sup>32</sup> For a 75 kg or 165 lb. person this would be .375 mg a day. Notice that little more than an 8-ounce steak a day from the above "depured" beef (that is, animals which have been removed from the range and moved to feedlots) would be at the chronic exposure level. While more than eight ounces of beef a day likely exceeds an average level of consumption for most people, it is an indicator that chronic exposure levels are possible for a large population. It is also very likely occurring in smaller numbers of people such as local ranchers, particularly given the levels of contamination and the various mediums for exposure in the phosphate mining area.

A "history of releases" by phosphate mining facilities is well established. As one example, the Smokey Canyon mine Final Environmental Impact Statement (EIS) of 1982 outlines an annual water quality testing procedure, including Se as one of the test criteria. Analysis of surface mine waste exceeded EPA water quality standards in 1980 thus Se risks were known twenty-five years ago. The water quality-monitoring program, testing ten locations on five local creeks, was designed to alert the agencies involved of any developing water quality problems of this mine.<sup>33</sup> As early as 1993, sampling data showed increases of Se at one of the sampling sites, Pole Creek, at .17mg/L, which is more than threefold over drinking water standards and remarkably higher than that same stream's control sample of .001 mg/L taken upstream of the mine. This same year also noted decreases in macroinvertebrate populations.<sup>34</sup> Annual reports from 1994 and beyond continued to show an increasing Se problem spreading to other streams tested under the monitoring program.

Despite the data, no action was taken except to initiate a CERCLA investigation in 2000 after the extent of the Se contamination had reached the public through the media. To date, no mitigation measures have been taken to control the Se contamination coming from Smokey Canyon's Pole Canyon dumpsite, which was filled between 1985-1990.

---

<sup>29</sup> Ibid. pg. 501.

<sup>30</sup> Agency for Toxic Substances and Disease Registry. <http://www.atsdr.cdc.gov/toxprofiles/tp92-2.pdf> pg. 15

<sup>31</sup> Ibid.

<sup>32</sup> Ibid. pg. A-3

<sup>33</sup> Smokey Canyon Phosphate Mine Final Environmental Impact Statement. March 1982. pgs. 2-22, 2-23 J.R. Simplot Co., Caribou County, Idaho.

<sup>34</sup> Mariah Associates Inc. Laramie, Wyoming. Aquatic Monitoring Program for Smokey Canyon Mine. 1994 results. On file at Bureau of Land Management office. Pocatello, Idaho.

This fill in Pole Canyon is the source of the elevated Se in test results first noted in the 1994 report on Pole Creek. It is also the source of Se water samples taken in 1999, which had levels that averaged 2,350 µg/L Se. Selenium continues to leach from this site at rates that have yet to stabilize.<sup>35</sup> A reasonable person may ask -- if the water quality testing method was designed to alert all parties involved, why were not the findings distributed, and consequently, if the findings did not trigger remedial action to address the problem, then what value does monitoring have?

It should be noted that the Smokey Canyon Mine's Pole Canyon dumpsite is only one of eight dumps at that mine and one of many similar dumpsites in the phosphate-mining area. It is also important to note that the time between the contamination first being noticed in Pole Creek of 0.17 µg/L and the 2,350 µg/L samples was six years and had grown considerably in that time. Obviously there are large quantities of selenium being released on a continual basis into Pole Canyon Creek. As such, they continue to accumulate up the food chain and could pose an increasing risk as selenium concentrations rise over time. Oversight through TRI reporting could be provided and would aid in preventing such future occurrences. This is especially true in light of the fact that surface and ground water quality sampling are still the criteria by which Se impacts are measured on not only supplements to the above EIS<sup>36</sup> but also new phosphate mining leases.<sup>37</sup>

The mining interests assert that "selective handling" of the waste rock, which contains the high Se concentrations is "an adequate response"<sup>38</sup> to the potential release of Se to the environment. However, column-leaching tests of this new process expect seepage to remain at levels of 81 µg/L.<sup>39</sup> This level is sixteen times greater than EPA's established standards pertaining to drinking water and protection of aquatic life established at 5 µg/L. Further, ground water modeling for expansion of the Smokey Canyon mine predicts selenium contaminated "plumes," exceeding Maximum Contaminant Levels (MCLs) to extend off site "at the end of a 100 year period."<sup>40</sup> This "adequate response" is an illustration of how a "history of releases" is planned to continue into the distant future and impact generations of local citizens.

## **2. Meeting chemical activity and use thresholds**

Phosphate mining in Idaho targets the Meade Peak Member of the phosphoria formation, which contains high amounts of Se. It is a geologic layer of about 170 feet in thickness containing thin-bedded, dark brown, carbonaceous, phosphatic mudstones and

---

<sup>35</sup> Site Investigation Report. Newfields, July 2005, Chapter 11, pgs. 11-15. J.R. Simplot Company.

<sup>36</sup> Smokey Canyon Mine, Panels B & C Final Supplemental Environmental Impact Statement. Pg. 2-11 April, 2002

<sup>37</sup> North Rasmussen Ridge Mine Final Environmental Impact Statement. Appendix B. August 2003.

<sup>38</sup> North Rasmussen Ridge Mine Final Environmental Impact Statement. Pg 44. August 2003.

<sup>39</sup> Maxim Technologies Inc. Bozeman, Montana. Simplot Smokey Canyon Mine Expansion Environmental Impact Statement Column Test Report: prepared for J.R. Simplot Company. 2002.

<sup>40</sup> Buck, Brian W., Winegar, Bruce. Integration of Surface Water Management with Mitigation of Ground Water Impacts at a Proposed Phosphate Mine Overburden Facility  
<http://www.jbr-env.com/about/articles/BuckandWinegarPaper4.pdf>



phosphorites. The targeted high-grade phosphate ores lie generally at the top and bottom of this formation with about the center half being considered "the Middle Shale Wastes or Low Grades [ores]."<sup>41</sup> In the mining process, low-grade ore beds that are less than .15 meters thick in the upper and lower zones are combined with the high-grade ores. On the other hand, high-grade beds less than .15 meters thick in the "middle waste zone" are typically included as waste.<sup>42</sup> These "middle waste shales" as the industry defines it, fit the description of waste rock as currently applied to metal mining facilities.<sup>43</sup> Therefore any toxic chemicals, such as Se, present in the waste rock must be reported under TRI.<sup>44</sup>

The use threshold of selenium by phosphate rock mining facilities is fulfilled by the use of "center waste shales" in reclamation. As defined in the 313 reporting guidance, "EPCRA section 313 chemicals used in mine reclamation are subject to the 'otherwise use' threshold of 10,000 pounds."<sup>45</sup> It is estimated based on general ore production to waste rock ratio and the concentrations of Se in waste rock that between 1.7 and 4 million pounds of Se is released to the environment annually by the mining interests through reclamation alone.<sup>46</sup> It is unknown to the general public, however, how much Se is "processed" or "otherwise used" overall as the mining interests deem all ore production, waste rock, and overburden amounts produced annually as proprietary information. As such the public is in the dark regarding selenium amounts in tailings ponds or other areas of the mining operations that impact the environment and the lives of people in surrounding communities.

### 3. Value of information to the public

Under this consideration the EPA evaluates whether requiring a prospective industry category to report is expected to increase the information made available or further the purpose of EPCRA. TRI reporting not only increases the citizenry's knowledge of toxins, but also gives them a heightened awareness of the health and environmental risks. This information allows the public to make more informed decisions as to where they desire to work, live, buy property, or to raise crops or livestock for human consumption. It is evident as well that TRI is intended to be an instrument of oversight as the information gained is "a yardstick by which progress can be measured by industry and local communities and governments . . . [and] enable all interested parties to set goals for environmental progress."<sup>47</sup>

---

<sup>41</sup> Smokey Canyon Mine, Panels B & C Final Supplemental Environmental Impact Statement. Pg. 3-2, April, 2002.

<sup>42</sup> Moyle, P.R., Piper, D.Z., Western Phosphate Fields-Depositional and Economic Models, *Life Cycle of the Phosphoria Formation: From Deposition to the Post-Mining Environment*. Pg. 589. Edited by James R. Hein. 2004.

<sup>43</sup> 62 Federal Register, 23859

<sup>44</sup> EPCRA Section 313, Industry Guidance: Metal Mining facilities. Pg. 3-28. Jan., 1999.

<sup>45</sup> Ibid. pg. 3-17

<sup>46</sup> Presser, T.S., Piper, D.Z., Bird, K.J., Skorupa, J.P., Hamilton, S.J., Detwiler, S.J., and Huebner, M.A. *Life Cycle of the Phosphoria Formation: From Deposition to the Post-Mining Environment*. Pgs. 48, 68, 332, 458. Edited by James R. Hein. 2004.

<sup>47</sup> 61 Federal Register, 33588

Of interest to many people nation wide is the Endangered Species Act (ESA). Currently in the phosphate mining region there exist three listed threatened species: the Canada lynx, grey wolf, and the bald eagle. There also exist at least fourteen species considered sensitive. Of these sensitive species, one of great concern is the Yellowstone cutthroat trout. Of the twelve geographic areas managed for the Yellowstone cutthroat trout, the upper Blackfoot and Salt River drainages have historically had the highest concentrations such as the now barren East Mill Creek, exemplified below.<sup>48</sup> This degradation of habitat is one of the reasons the Yellowstone cutthroat trout had been petitioned for inclusion on the threatened list of the ESA. This species is currently under consideration as the courts have concluded "the [original] petition contains substantial evidence indicating that listing the Yellowstone cutthroat trout as threatened may be warranted."<sup>49</sup> Those who are concerned about the survival of the Yellowstone cutthroat trout and other threatened species would have more information on which to gauge the condition of their habitats over time.

It is imperative that the EPA requires phosphate rock mining facilities to report releases of Se, as it is a fast growing problem. In 2002, the Idaho Department of Health and Welfare (or the Division of Environmental Health) issued a fish consumption advisory for East Mill Creek due to Se contamination. The advisory was based on seven trout from East Mill Creek having a mean fish tissue Se concentration of 4.8 µg/g wet weight fillet in 2002.<sup>50</sup> In July of 2004, fish samples were collected for the Site Investigation Report from streams impacted by the Smokey Canyon Mine. One of the streams, Hoopes Spring, produced fish that ranged from 3.4 -7.43 mg/kg Se whole fish wet weight with a mean of 5.76 mg/kg.<sup>51</sup> These high levels found in other streams could mean more consumption advisories are warranted.

Another comparison illuminating the Se contamination progression began in May of 2001, where twenty-two fish samples were collected from nine streams in the phosphate mining area, ranging from 3.5 to 15.2 µg/g Se whole fish tissue dry weight.<sup>52</sup> Four years later in 2005, twenty-one samples in seven streams and rivers in the same area yielded fish that all had high concentrations of Se, ranging from 5.29 µg/g to 34.9 µg/g fish tissue, dry weight.<sup>53</sup> In the 2005 round of sampling, no fish could be found in East Mill Creek either by the Greater Yellowstone Coalition or the Idaho Department of Environmental Quality,<sup>54</sup> correlating with observations that "fish populations can decline

---

<sup>48</sup> Idaho Fish and Game.2000. Comments to the U.S. Fish and Wildlife Service regarding petition to list Yellowstone cutthroat trout as threatened under the Endangered Species Act. Boise, Idaho.

<sup>49</sup> U.S. District Court for the District of Colorado. Civil Acton No. 04-F-108 (OES). 351 F. Supp. 2d 1137: 2004 U.S. Dist. Lexis 26359: 59 ERC (BNA) 1998

<sup>50</sup> Idaho Department of Health and Welfare. Health Consultation, Selenium in fish in streams of the upper Blackfoot River watershed. February 2003.

<sup>51</sup> Site Investigation Report, Newfields, July 2005. Table 6-18. J.R. Simplot Company.

<sup>52</sup> Hamilton, S. J., Buhl, K.J., May, 2001. Selenium and other trace elements in Water, Sediment, Aquatic Plants, Aquatic Invertebrates, and Fish from Streams in Southeastern Idaho Near Phosphate Mining Operations. Pg. 24.

<sup>53</sup> Weber, Frank. Research Triangle Institute, Research Triangle Park, NC. Technical Report. RTI Project No.:08973.002.009, Sep. 19, 2005.

<sup>54</sup> Verbal communication. 30 Nov., 2005. Lynn VanEvery. Richard Clegg. Idaho Department of Environmental Quality.

or disappear over the course of a few years. . . unless one is cognizant of the subtle way in which selenium operates,” consistent with the Belews Lake case above.<sup>55</sup> The only remaining criterion in which to gauge East Mill Creek is by its water, which in the above July, 2005 report was 103µg/L, a value that is twenty times the current EPA water based criterion to protect aquatic life, set at 5µg/L.

The Idaho Department of Health and Welfare has not revisited this issue utilizing fish tissue samples other than those collected in 2001 and earlier even though selenium contamination has spread to other streams since the data for the health assessments were collected. Streams deemed “un-impacted” in 2001, for fish,<sup>56</sup> are now on the Idaho Dept. of Environmental Quality’s 303 (d) list of impaired streams due to selenium contamination. Two such streams are Sage Creek and Spring Creek.<sup>57</sup> Moreover, another “un-impacted” fish sampled location in 2001, Kendall Creek, was electro-fished a year later by the Forest Service. The Forest Service did not find any fish even though the stream had historically held healthy populations of trout,<sup>58</sup> another now barren site due to possible Se mine pollution. It is reasonable to conclude that based upon the latest tests, the Idaho Department of Health and Welfare would likely issue consumption advisories for other streams in the Blackfoot and Salt River watersheds. Without information concerning selenium releases, those who are aware of the dangerous selenium issue are concerned that people who consume fish in the area may become ill or that more fish populations may disappear.

Much of the impacted area is within the Caribou-Targhee National Forest, where there are few restrictions regarding where people can recreate, hunt, fish, or drink the water. As more people use the lands, and move into the area communities, the greater the health risk posed. Many counties in and bordering the Greater Yellowstone Ecosystem have had a growing population rate of approximately 15% with some achieving phenomenal growth such as Teton County, Wyoming, which saw a 63% growth rate or Teton County, Idaho growing at over 74% between 1990-2000.<sup>59</sup> A large percentage of this growth is due to people moving into the area. With the ever increasing problem of Se contamination in southeast Idaho, combined with the number of people moving into the area who are unlikely to have any knowledge of the Se contamination issues, updated information about Se releases, which could be provided by TRI reporting, would raise awareness and better protect the public.

Not only is the Se contamination problem growing, it could escalate at an exponential rate. As explained earlier, Se is transported into the environment via water run off and infiltration. Drought conditions throughout much of the western United States has

---

<sup>55</sup> Lemly, Dennis. Selenium Impacts on Fish: An Insidious Time Bomb. Human and Ecological Risk Assessment: Vol. 5, No. 6, pp. 1139-1151 (1999)

<sup>56</sup> Human Health and Environmental Risk Assessment, TetraTech EMI, 2002 Appendix H, Table H-16

<sup>57</sup> Draft 2002 Integrated 303(d)/305(b) Report, IDEQ 2004.

<sup>58</sup> USDA Forest Service, Caribou-Targhee National Forest, 2002 Cutthroat Trout Fish Distribution Survey Report, Kendall Creek. 26 June, 2002.

<sup>59</sup> U.S. census figures 1990-2000. <http://quickfacts.census.gov>.

reduced traditional flows in the Blackfoot River watershed by almost 50%.<sup>60</sup> As a result there is the great possibility that Se loadings to the watershed could increase 3 to 7 times the current amount with a return to normal flows.<sup>61</sup> There are some who believe normal flows may return this year.<sup>62</sup> This obviously would greatly increase the risk and exacerbate the damage already done.

Since the livestock deaths in '96 and '97, when the Se contamination issue was more illuminated to the public eye, the phosphate mining interests have not made information concerning the quantities of Se released to the environment more available. In fact, it is just to the contrary. GYC's initial request for waste rock production information from the Bureau of Land Management, the permitting agency for phosphate mines, was denied citing proprietary reasons.<sup>63</sup> The GYC filed a Freedom of Information Act request with the Department of the Interior to obtain the amounts of waste rock produced in order to understand the amounts of Se being released annually. This too was denied citing proprietary reasons. However, it was revealing that there is little oversight given by the Department of Interior's Bureau of Land Management to the phosphate mines. In the FOIA letter of denial, the Bureau of Land Management states, "all mining companies treat all material mined, and not shipped for processing, as overburden and do not distinguish the difference between rock types in their reports."<sup>64</sup> We question who is providing oversight to ensure that the Se laden waste rock is being handled in accordance with "Best Management Practices" outlined in the mining permits. It seems, by design, difficult for anyone to obtain information regarding Se release information. This alone is a compelling reason for the phosphate rock mines to fall under TRI reporting, as this seems the only way for the public to become informed on the amounts and dangers of Se where they live.

The mining interest's assertion that the Best Management Practice (BMP) of "selective handling" is an adequate answer to contain Se contamination from entering the environment is tempered by their admission that "with the on-going selenium investigations . . . all the BMPs needed have not yet been identified."<sup>65</sup> Moreover, containment does not negate the TRI reporting requirements. The EPA supported by the courts has concluded that a release "does not necessarily connote direct physical contact between the toxic chemical and environmental medium. . . [and] is not required before section 313 reporting requirements are triggered."<sup>66</sup> This quote goes to the heart of EPCRA as there is recognized the potential for a future release; thus TRI reporting allows citizens and local governments to plan for the possibility of such occurrences.

---

<sup>60</sup> Presser, T.S., Hardy, M., Huebner, M.A., and LaMothe, P.J. Selenium Loading through the Blackfoot River Watershed: Linking Sources to Ecosystems. *Life Cycle of the Phosphoria Formation: From Deposition to the Post-Mining Environment*. Pg.453. Edited by James R. Hein. 2004.

<sup>61</sup> Ibid. pg. 457.

<sup>62</sup> Post Register "Droughts demise". 7 December, 2005. Idaho Falls, Idaho.

<sup>63</sup> Department of Interior, Bureau of Land Management. Pocatello, Idaho. Electronic communication. 11 Oct. 2005.

<sup>64</sup> Denial of FOIA request. 1278 (FOIA No. ID-2006-03) EFTS BLM-2006-00079. 5 Dec. 2005.

<sup>65</sup> North Rasmussen Ridge Draft Environmental Impact Statement. Pg 2-30. March 2003.

<sup>66</sup> U.S. District Court for the District of Colorado. Civil Action No. 97 N 2665. 2001 U.S. Dist. Lexis 915; 51 ERC (BNA) 2104

#### 4. Summary

The information currently available to the public is insufficient to adequately protect their interests. As already discussed, the Idaho Department of Health and Welfare's review of Se contamination for their most recent Health Assessment was based on samples taken almost five years ago.<sup>67</sup> The public should have up-to-date information so that risks can be tracked from year-to-year. Further, in researching the data published regarding selenium, one quickly learns that knowledge concerning the bioaccumulative nature of Se is necessary to fully understand the impacts of this listed Section 313 toxin. However, the recently released Site Investigation Report concerning Smokey Canyon Mine developed to address the impacts of Se released by this mine's dump sites and from which CERCLA mitigation measures will be developed, omits any discussion of bioaccumulation in all of its 819 pages.<sup>68</sup> This is disconcerting as future SIRs are in process for other mine owners and will, no doubt, follow the same framework of the one just released.

Information concerning Se will not only help citizens protect themselves but also empower them with a measure of oversight. Additional oversight may prompt the mining interests to become more diligent in complying with current Clean Water Act provisions and prevent future violations of their National Pollution Elimination Discharge Permit System Multi-Sector General Permit that were noted at four separate locations by differing owners in a September 2004 inspection.<sup>69</sup> Here one could conclude the mining interests are rather ambivalent regarding selenium release issues and reluctant and opposed to expose any data that may cast a dark shadow on their operations, such as waste rock/Se production figures.

The problems associated with selenium contamination in southeast Idaho and the Salt River drainage in western Wyoming have grown at an enormous rate in the past decade and as illustrated above, are still growing. Citizens need to have access to as much information related to Se releases as possible. The Greater Yellowstone Coalition is hopeful that the EPA will give this petition request serious and immediate consideration resulting in the promulgation of a rule to require SIC code 1475, NAICS 212392, phosphate rock mining facilities to report releases of listed section 313 toxic chemicals. Again, we ask the EPA to expeditiously publish this petition in the Federal Register.

---

<sup>67</sup> Idaho Department of Health and Welfare. 2005 Health Assessment of Southeast Idaho Phosphate Resource Area.

<sup>68</sup> Site Investigation Report, Newfields, July 2005. Smokey Canyon Mine. J.R. Simplot Company

<sup>69</sup> U.S. EPA Region 10. Notice of Violation and Request for Information. Sep. 13-15, 2004. MSGP tracking nos. IDR05A351, IDR05A352, IDR05A382, IDR05A469

Greater Yellowstone Coalition  
162 N. Woodruff Avenue  
Idaho Falls, ID 83401-4335

**CERTIFIED MAIL™**



7004 0550 0000 1655 9115

**RETURN RECEIPT  
REQUESTED**

Steve Johnson, Administrator  
Environmental Protection Agency  
Ariel Rios Building  
1200 Pennsylvania Avenue, N.W.  
Washington, DC 20460